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㉗ Anmelder:  
Heidelberger Druckmaschinen AG, 69115  
Heidelberg, DE

㉘ Erfinder:  
Spiegel, Nikolaus, Dr., 6909 Walldorf, DE

⑤⑥ Für die Beurteilung der Patentfähigkeit  
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DE	34 13 159 C2
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DE	39 01 174 A1
DE	36 32 744 A1
DE	28 27 520 A1
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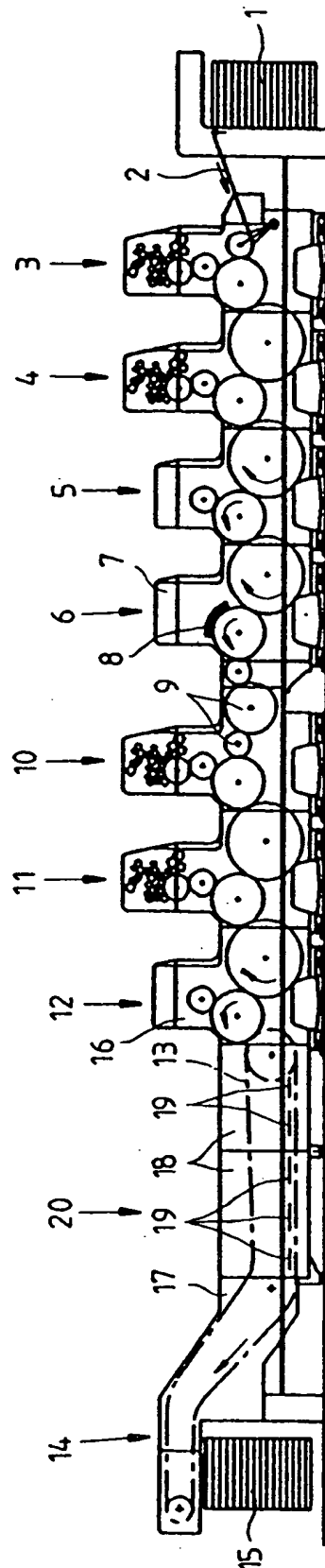
⑤④ Bogendruckmaschine

⑤⑦ Die Erfindung bezieht sich auf eine Bogendruckmaschine für ein mehrfarbiges Bedrucken von zwei Seiten eines Bogens mit mehreren Druckwerken, mit einer Wendeeinrichtung nach den Druckwerken zum Bedrucken der ersten Bogenseite und mit einem Lackierwerk zum Lackieren einer bedruckten Bogenseite, bei der das Bedrucken der beiden Seiten eines Bogens mit mehreren Farben in einem Arbeitsgang durchgeführt wird.

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**Multicolour sheet printing machine - has separate trains of printing and lacquering rollers for each side**

**Heidelberger Druckmaschinen AG / Dr. Nikolaus Spiegel**

### **Abstract**

The printing machine can print on both sides of the page. It prints one side in several colors using two or more sets of rollers (3, 4). The sheets of paper are fed to these rollers from a stack (1). After printing the paper sheets pass through a lacquering station (5), which lacquers them on the printed side. The sheets then pass through a drying station (6).

After drying, the printed sheets pass through a second set of rollers (10, 11) for printing the other side, followed by a lacquering station (12). The paper sheets are then dried and stacked.

USE/ADVANTAGE - Multicolor machine for printing and lacquering sheets of paper.

### **Description**

The invention refers to a sheet-fed press for multi color printing on two sides of a sheet with several printing stations, with a turning mechanism after the printing stations for printing on the first sheet side and with a lacquer work for lacquering a printed sheet side.

Such a printing machine, in particular a sheet-fed offset print machine, normally has four printing stations for the four basic colors and possibly other printing stations for special colors.

In a preferred arrangement of the invention, a further lacquer work and afterwards a second drying station are incorporated after the last printing station. Thus also high-quality art prints, which are on both sides lacquered, can be manufactured in a single processing step in this machine.

In accordance with a further preferred arrangement of the invention, the first drying station possesses building groups of a lacquer work and the second drying station is incorporated after the last printing station within the range of an extension of the conveyor. Here it is preferred for the first drying station to be built into the side rack of a lacquer work. Substantial cost savings are thereby possible, without impairing the appearance of the machine.

In a third preferred arrangement, the second drying station is built in side parts, which connect the side parts of the last lacquer work with the side parts of the stacker. Here heat sources are incorporated into the drying actions over the sheet width, across which the freshly printed sheet sides are moved.

The high expenditure of time and the problems encountered when the sheet is twice going through the printing machine are avoided by the arrangement according to the present invention. In addition, the first printing on the **schoendruckseite** is lacquered and dried before it runs into the printing stations for the second print, so that the first printed-on sheet side is **drained** and a **lubrication** is prevented.

An example of the invention is schematically represented in the design.

The sheet which can be printed on with the shown sheet-fed offset print machine by an investor pile 1 by way of a feed table 2 are supplied to the first printing station 3. After this printing station 3, several further printing stations 4 can follow, so that a four-colored one-sided printing on the first sheet side is produced, for example, with these printing stations. After the printing stations 3, 4 a lacquer work 5 is intended, with which the first multi-color print can be lacquered. Afterwards, along the sheet transportation path, a drying station 6 is incorporated, with which the printed on and lacquered first sheet side is dried, in order to avoid damage during the following subsequent treatment. For the drying station 6, side racks 7 can be used, as they are normally used for a lacquer work, so that additional building expenditures in the drying station 6 are not necessary. Heat sources 8, which are directed toward the freshly printed-on sheet side across the sheet width, are also shown.

After the drying station 6 along the sheet travel direction, a turning mechanism 9 is incorporated, with which the sheets printed on one side are turned over, in order to be printed on the second side thereafter. For this, further printing stations 10, 11 are incorporated after the turning mechanism, whereas at least four printing stations are normally used here in practice. With these printing stations the second sheet side is printed in polychrome after the perfecting.

After the last printing station 11 a further lacquer work 12 can be incorporated, in order to provide also the second sheet side with a lacquer print. The printed-on and lacquered sheet of a stacker 14 are then supplied and put down on a stack 15 by an conveyor 13. Side parts 18, over which the sheet width handing heat sources 19 are arranged, are incorporated between the side

parts 16 of the last lacquer work 12 and the side parts 17 of the stacker 14. The heat sources 19 are moved by the conveyor 13 across the printed on and lacquered sheet with the freshly printed on second sheet side. The side parts 18 serve here as the extension of the dry section and connect the side parts 17 of the stacker 14 to the side parts 16 of the last painting work 12. The second drying station 20 and/or the side parts 18 can be adapted in length to meet the respective requirements for the drying process.

#### Parts list

1 investor pile

2 feed table

3 printing station

4 printing station

5 painting work

6 drying station

7 side rack

8 heat source

9 turning mechanism

10 printing station

11 printing station

12 painting work

13 conveyor

14 stacker

15 stacks

16 side part

17 side part

18 side part

19 heat source

20 drying station

### Claims

1. A sheet-fed press for multi-color printing on two sides of a sheet with several printing stations, by a turning mechanism after the printing stations for printing on the first sheet side and marked by a lacquer work for lacquering a printed-on sheet side, characterized by the fact that after the printing stations (3, 4) for printing the first sheet side on a lacquer work (5), a drying station (6) and afterwards a turning mechanism (9) are incorporated and that, along the sheet transportation direction, after the turning mechanism (9) printing stations (10, 11) are arranged for printing on the second sheet side.

2. A sheet fed press according to claim 1, further characterized by the fact that after the last printing station (11) a further painting work (12) and afterwards a second drying station (20) are included.

3. A sheet fed press according to claim 1 or 2, further characterized by the fact that the first drying station possesses (6) building groups of a lacquer work and the second drying station (20) is included after the last printing station (11) in the range of an extension of the conveyor (13).

4. A sheet fed press according to claim 3, further characterized by the fact that the first drying station (6) is built in side racks (7) of a painting work.

5. A sheet fed press according to claim 2 or 3, further characterized by the fact that the second drying station (20) is built in side parts (18), which connect the side parts (16) of the last painting work (12) with the side parts (17) of the stacker (14).

6. A sheet fed press according to claim 1 or 2, further characterized by heat sources (8, 19) across the sheet width in the drying act ions (6, 20) by which the freshly printed on sheet side is moved.

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54 Bogendruckmaschine

57 Die Erfindung bezieht sich auf eine Bogendruckmaschine für ein mehrfarbiges Bedrucken von zwei Seiten eines Bogens mit mehreren Druckwerken, mit einer Wendeeinrichtung nach den Druckwerken zum Bedrucken der ersten Bogenseite und mit einem Lackierwerk zum Lackieren einer bedruckten Bogenseite, bei der das Bedrucken der beiden Seiten eines Bogens mit mehreren Farben in einem Arbeitsgang durchgeführt wird.

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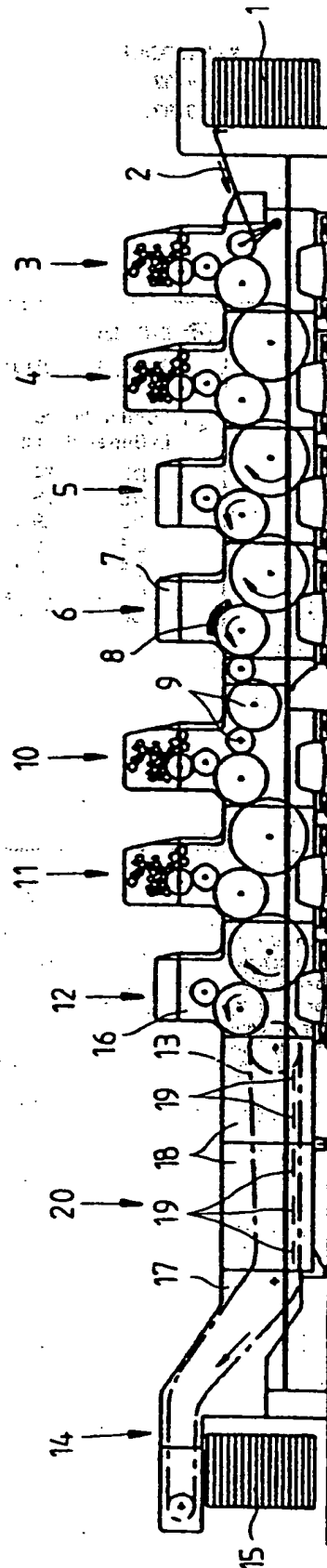


1	Anlegerstapel	
2	Anlegetisch	
3	Druckwerk	
4	Druckwerk	
5	Lackierwerk	5
6	Trockenstation	
7	Seitengestell	
8	Wärmequelle	
9	Wendeeinrichtung	
10	Druckwerk	10
11	Druckwerk	
12	Lackierwerk	
13	Ausleger-Kettensystem	
14	Stapelauslage	
15	Stapel	15
16	Seitenteil	
17	Seitenteil	
18	Seitenteil	
19	Wärmequelle	
20	Trockenstation	20

### Patentansprüche

1. Bogendruckmaschine für ein mehrfarbiges Bedrucken von zwei Seiten eines Bogens mit mehreren Druckwerken, mit einer Wendeeinrichtung nach den Druckwerken zum Bedrucken der ersten Bogenseite und mit einem Lackierwerk zum Lackieren einer bedruckten Bogenseite, dadurch gekennzeichnet, daß nach den Druckwerken (3, 4) zum Bedrucken der ersten Bogenseite ein Lackierwerk (5), eine Trockenstation (6) und danach eine Wendeeinrichtung (9) vorgesehen sind und daß, in Bogentransportrichtung gesehen, nach der Wendeeinrichtung (9) die Druckwerke (10, 11) zum Bedrucken der zweiten Bogenseite angeordnet sind. 25
2. Bogendruckmaschine nach Anspruch 1, dadurch gekennzeichnet, daß nach dem letzten Druckwerk (11) ein weiteres Lackierwerk (12) und danach eine zweite Trockenstation (20) vorgesehen sind. 30
3. Bogendruckmaschine nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß die erste Trockenstation (6) Baugruppen eines Lackierwerks besitzt und die zweite Trockenstation (20) nach dem letzten Druckwerk (11) im Bereich einer Verlängerung des Ausleger-Kettensystems (13) vorgesehen ist. 35
4. Bogendruckmaschine nach Anspruch 3, dadurch gekennzeichnet, daß die erste Trockenstation (6) in Seitengestellen (7) eines Lackierwerks eingebaut ist. 40
5. Bogendruckmaschine nach Anspruch 2 oder 3, dadurch gekennzeichnet, daß die zweite Trockenstation (20) in Seitenteilen (18) eingebaut ist, die die Seitenteile (16) des letzten Lackierwerks (12) mit den Seitenteilen (17) der Stapelauslage (14) verbinden. 45
6. Bogendruckmaschine nach Anspruch 1 oder 2, dadurch gekennzeichnet, daß in den Trockenstationen (6, 20) über die Bogenbreite reichende Wärmequellen (8, 19) vorgesehen sind, an denen die frisch bedruckte Bogenseite vorbeibewegt wird. 50

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